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EXAMINER	
KYLE, MICHAEL J	
ART UNIT	**PAPER NUMBER**
3677	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	**Application No.** 10/684,478	**Applicant(s)** TAI, WEN HAO	
	Examiner Michael J Kyle	**Art Unit** 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-9* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to because it addresses the situation of the internally toothed clamp ring preventing the fastening member from turning along with the screen when the screen is rotated. It is not clear what causes the fastening member to turn with the screen when the screen is rotated, if the clamp ring is not present. It appears as though the fastening member 13 of the instant application would not turn even if the clamp ring were not present, because bracket 12 is the only rotating piece during rotation of the screen. For example, in figure 4, rotating the screen will cause bracket 12 to rotate about shaft 11, on portion 112, 114. On either side of the bracket there is a locating ring 15 with a flat edge 151, which abuts a flat edge of the shaft 112, thereby preventing rotation of the locating ring 15. Since ring 15 is not rotating, it appears that no rotation can be passed through other members 18, 19, 110, by a frictional force or other means, to impart a rotation on the fastening member, that would cause it to separate from the pivot shaft. It appears as though the only way a rotating force could be applied to the fastening member would be through frictional engagement of bracket 12 with all of the intermediate elements in contact with the fastening member. In other words, it is not clear how the fastening member would rotate relative to the pivot shaft so that it would become separated from the pivot shaft, even if the clamp rings were not present.

Claim Objections

2. Claim 3 is objected to because of the limitation in lines 3-4 of the conical washer, sleeve, and flat washer "located between said at least one internally toothed clamp ring". It is unclear

which other feature these items are located between, as these items cannot be "between" just one element (the clamp ring). As best understood by the examiner, they are between the clamp ring and bracket.

3. Claim 7 is objected because it recites "a locating ring" twice, and recites, "said locating ring". It is unclear which locating ring is being referred to by this limitation. Examiner suggests clarifying the claim language to distinguish the two locating rings from one another.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4-7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (U.S. Paten No. 5,269,047) in view of Okada et al ("Okada", U.S. Patent no. 5,109,570). Lu discloses a hinge structure comprising a pivot shaft (20) with a mounting section (22) and a shaft section (24) with a tightening section (201). Lu also discloses an L-shaped bracket (10) with a first arm (18) and a second arm (19) normal to the first arm and having a shaft hole (11). Lu further discloses a fastening member (16) screwed to the tightening section of the pivot shaft. Lu discloses the mounting section of the pivot shaft to be connected to a screen, and the mounting arm of the bracket to be connected to a mainframe. This configuration is opposite of the claimed configuration, where the mounting section and mounting arm are connected to the mainframe

and screen, respectively. However, this appears to be nothing more than a reversal of the parts of Lu, and is considered to be within the level of one having ordinary skill in the art. Reversing the parts such that the mounting section is connected to the mainframe and the mounting arm is connected to the screen does not produce a new or unexpected result. Additionally, the same relative motion between the parts exists in both configurations. It would have been obvious to one having ordinary skill in the art at the time of the invention to reverse the arrangement of Lu such that the mounting section is connected to the mainframe, and he mounting arm is connected to the screen.

6. Lu also fails to disclose at least one internally toothed clamp ring, as claimed. However, Okada teaches a hinge construction with a pivot shaft (31), bracket (30), and an internally toothed clamp ring (37). The clamp ring includes teeth (37b). The teeth bite into the outer surface of the pivot shaft (31) to fixedly attach to the pivot shaft (column 5, lines 38-42). The clamp ring serves to bring rotary plates into contact by a constant force (column 5, lines 43-47). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Lu to include the clamp ring of Okada in order to apply a constant force to the springs (14) of Lu. In Lu, this force is applied by restraining member 15. However, the restraining member can move axially along the shaft, therefore the force applied to the springs (14) varies depending on the position of nut (16). When the clamped ring 37 of Okada is implemented, the axial play will reduced because as Okada explicitly states, the ring includes teeth that bite into the shaft.

7. The combination of Lu and Okada results in the bracket (10) of Lu and the internally toothed clamp ring (37) of Okada being sequentially mounted on the pivot shaft. The teeth (37b)

of the clamp ring firmly engages an outer surface of the pivot shaft. As a result, the fastening member is prevented from turning along with the screen.

8. With respect to claim 4, Lu discloses the mounting section on the pivot shaft (20) to have at least one mounting hole (see figure 1) to connect to a clam-type apparatus.

9. With respect to claim 5, Lu discloses the tightening section (201) on the shaft is provided with screw threads, and the fastening member is a nut (16) corresponding to the threads.

10. With respect to claim 6, Lu discloses the mounting arm (18) is provided with at least one mounting hole (see figure 1).

11. With respect to claim 7, Lu discloses the pivot shaft to include a swing stop section (flat portion 202) with a flat surface. An oil ring (13) is provided between the pivot shaft and bracket. A locating ring (15) and oil ring (12) are provided between the bracket and clamp ring (once modified as taught by Okada). The locating ring (15) has a straight edge on its inner circumference corresponding to the flat surface of the swing stop section. Lu does not disclose a locating ring between the bracket and pivot shaft. However, placing locating rings on both sides of bracket rather than just one does not appear to produce a new or unexpected result, and is within the level of one having ordinary skill art. It would have been obvious to one having ordinary skill in the art at the time of the invention to place locating rings on both sides of the bracket, rather than just one, as a new or unexpected result does not arise from such a modification.

12. With respect to claim 9, Lu discloses the apparatus to be a notebook computer.

13. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh et al ("Hsieh", U.S. Patent Application Publication 2003/0140456) in view of Okada. Hsieh discloses a hinge structure comprising a pivot shaft (10) with a mounting section (12, 20) and a shaft section (14) with a tightening section (16). Hsieh also discloses an L-shaped bracket (30) with a first arm (34) and a second arm (32) normal to the first arm and having a shaft hole (36). Hsieh further discloses a fastening member (N) screwed to the tightening section of the pivot shaft. Hsieh discloses the mounting section (20) of the pivot shaft to be connected to a mainframe, and the mounting arm of the bracket to be connected to a screen. Hsieh fails to disclose at least one internally toothed clamp ring, as claimed.

14. Okada teaches a hinge construction with a pivot shaft (31), bracket (30), and an internally toothed clamp ring (37). The clamp ring includes teeth (37b). The teeth bite into the outer surface of the pivot shaft (31) to fixedly attach to the pivot shaft (column 5, lines 38-42). The clamp ring serves to bring rotary plates into contact by a constant force (column 5, lines 43-47). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Hsieh to include the clamp ring of Okada in order to apply a constant force to the springs (40) of Lu. The teeth of the Okada's clamp ring will prevent axial play along the shaft, and provided a constant force to the springs.

15. With respect to claim 3, Hsieh discloses the hinge to further comprise a slit conical washer (40), a sleeve (not numbered, feature with flat upper and lower portion and rounded left and right portion on its inner circumference, shown in figure 1, immediately adjacent to 40), and a flat washer (not numbered, feature immediately adjacent both sides of 34, with a square inner portion, in figure 1) located between the clamp ring (as modified by Okada) and the bracket.

Each conical washer is a non-closed spiral member with a slit between two each free end. The conical washers provide an axial force and are adjustable by tightening the fastening member.

16. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Okada as applied to claim 1 above, and further in view of Cho et al ("Cho", U.S. Patent No. 6,867,962). Lu discloses a locating ring (15) and oil ring (12, 13), but does not disclose a locating ring on both sides of the bracket or the lugged ring as claimed.

17. Initially, examiner cannot find in the specification any criticality for including a locating ring on both sides of the bracket. There appears to be no new or unexpected resulted that arises from such a configuration. As locating rings are known in the art as shown by Lu, it is considered that one having ordinary skill in the art would recognize to place the locating rings in suitable locations. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the combination of Lu and Okada, such that locating rings are placed on both sides of the bracket, as no new or unexpected result is achieved from such a modification. Additionally, Cho teaches a lugged ring (43) to fix a hinge member to plate (10, column 7, lines 22-34). As lugged rings are known within the art, as shown by Cho, one having ordinary skill in the art would know where to place the lugged ring to achieve its intended purpose. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Lu and Okada as taught by Cho, to include a lugged ring to fasten a hinged member to a plate. Examiner cannot find any criticality for placing the lugged ring on both sides of the bracket as claimed, and it appears that no new or unexpected result arises from such an arrangement. It would have been obvious to one having ordinary skill in the art at the time of the

invention to use lugged rings on both sides of the bracket as no new or unexpected result arises from such an arrangement.

18. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Okada as applied to claim 1 above, and further in view of Cho. Lu discloses the shaft section to includes a swing stop section (202) with a flat surface. Lu also shows an oil ring (12, 13), and a locating ring (15). The locating ring has a straight section along its inner circumference corresponding to the flat surface of the shaft. Okada shows a flat washer (12, 13). Neither Lu nor Okada show lugged ring, or the claimed arrangement of the rings.

19. Cho teaches a hinge comprising a lugged ring (43) with lugs (43a) to fix a hinge member to plate (10, column 7, lines 22-34) at slots (25a). As lugged rings are known within the art, as shown by Cho, one having ordinary skill in the art would know where to place the lugged ring to achieve its intended purpose. Additionally, as disclosed by Lu and Okada, locating rings, oil rings, and flat washers are all known in the art. It is considered within the level of one having ordinary skill in the art to place these known items in arrangement to suit their known purpose. Additionally, examiner cannot find any criticality for the claimed arrangement, and no new or unexpected result appears to be achieved when compared to the prior art by the claimed arrangement of the items. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Lu and Okada as taught by Cho, so that a lugged ring is included in the combination of Lu and Okada, to connect a hinge member to a plate or bracket. Additionally, it would have been obvious to one having ordinary skill in the art at the time of the invention to arrange all of the rings in the claimed manner, as each of the use of each of the rings

is known within the art, and no new or unexpected result arises from using the claimed arrangement.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to hinge arrangements: Yang, Huong, Lu (U.S. Patent No. 5,940,936), Wu, Chae, Lu et al, Chih et al, and Lu (U.S. Patent Application Publication 2003/0221289).

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Kyle whose telephone number is 571-272-7057. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mk

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